IVANOV, Fedor Mikhaylovich; ZASHCHEPIN, A.N., redaktor; KOGAN, F.L.,
tekhnicheskiy redaktor.

[Cement economy in road construction] Ekonomiia tsementa pri stroitel'stve dorog. Moskva, Nauchno-tekhn.izd-vo avtotransp. lit-ry, 1954. 91 p. (MLRA 9:6)
(Road construction)

ZASHCHEPIN, ALEKSEY NIKITICH

IVANOV, Nikolay Nikolayevich; **ZASHCHEPIN**, Aleksey Nikitich; **KORSUNSKIY**, Mark Borisovich; **MOTYLEV**, Yuliy Lazarevich; **PUZAKOV**, Nikolay Antonovich; **TULAYEV**, Aleksandr Yakovlevich; **BABKOV**, V.F., redaktor; **GALAKTIONOVA**, Ye.N., tekhnicheskiy redaktor

[Planning the surfacing of roads] Proektirovanie dorozhnykh odezhd. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1955. 249 p. (MLRA 9:3)

(Road construction)

ZASHCHEPIN, A.N., kandidat tekhnicheskikh nauk.

[redacted]

Cement concrete pavements built in freezing temperatures give many years of service. Avt.dor. 18 no.1:13 Ja-F '55. (MIRA 8:4)
(Roads, Concrete--Cold weather conditions)

ZASHCHEPIN, A.N., kandidat tekhnicheskikh nauk.

Improve machinery for constructing concrete roads. Avt.dor. 18 no.2:19-20 Mr-Ap '55. (MIRA 8:6)
(Road machinery)

GORETSKIY, L.I., kandidat tekhnicheskikh nauk; ZASHCHEPIN, A.N., kandidat tekhnicheskikh nauk.

Quality indexes for cement concrete pavements. Avt.dor. 19 no.4: 7-9 Ap '56. (MLRA 9:8)

(Pavements, Concrete)

ZASHCHEPIN, A.N., kandidat tekhnicheskikh nauk.

Technical requirements for the design of cement concrete pavements.
Avt.dor.19 no.5:20-22 My '56. (MIRA 9:8)
(Pavements, Concrete)

ZASHCHEPIN, A.N.

ZASHCHEPIN, A.N., kand.tekhn.nauk; ORLOVSKIY, V.S., inzh.

Calculating prestressed concrete road surfacing. Avt.dor. 19 no.11:16-17 N '56. (MIRA 10:10)
(Roads, Concrete)

ZASHCHEPIN, A.N., kandidat tekhnicheskikh nauk; OVCHAROV, V.I., kandidat tekhnicheskikh nauk.

Experience in laying road pavements in freezing temperatures. Avt. dor.20 no.1:16 Ja '57. (MIRA 10:3)
(Pavements) (Road construction--Cold weather conditions)

ZASHCHEPIN, A.N., kandidat tekhnicheskikh nauk; KOZLOVSKIY, B.K., inzhener.

State standards for cement concrete used in road construction. Avt. dor. 20 no.5:28-29 My '57. (MIRA 10:8)
(Concrete--Standards)

ZASHCHEPIN, A.I.

ZASHCHEPIN, ~~A.N.~~, kand.tekhn.nauk; VINOGRADOVA, O.A., mladshiy nauchnyy sotrudnik.

Using abietic resin in constructing concrete pavement. Avt.dor. 20 no.7:10-11 Jl '57. (MIRA 10:10)
(Pavements, Concrete) (Gums and resins)

13
SOV/101-58-6-6/13

AUTHORS: Zashchepin, A.N., and Myshkovskaya, S.A.

TITLE: Slag Portland Cement for the Concrete Pavements of Roads and Airfields (Shlako-portland-tsement dlya betonnykh pokrytiy dorog i aerodromov)

PERIODICAL: Tsement, 1958, Nr 6, pp 20-23 (USSR)

ABSTRACT: In several foreign countries, slag portland cement with an addition of blast furnace slag of 14 to 70% is used for paving roads and airfields. In the USSR, the State Standard GOST 970-41 specifies the use of 20 to 85% of slag in concrete mixtures. Pure clinker with 15 to 30% granulated blast furnace slag is here investigated. The clinker was ground to a specific surface of 4,240 cm^2/g, the slag to 3,750, 6,000 and 8,000 cm^2/g. The concrete samples were saturated with water and then cooled to -15 to -20°C. After this, they were thawed in water of 10 to 17°C.

Card 1/3

14
SOV/101-58-6-6/13

Slag Portland Cement for the Concrete Pavements of Roads and Airfields

The test results (Figure 1) show that the resistance increases with the specific surface of the cement and the slag. The resistance to compression and bending is, during the first seven days, 10-20% lower than that of pure clinker without slag, but after 28 days it is 10% higher. If the specific surface of the slag is increased from 3,750 to 8,000 cm^2/g the resistance is higher already in the first seven days. Concrete with slag of 6,000 cm^2/g and an air-attracting addition is, after 700-800 cycles of freezing and thawing, more frost resistant than pure clinker.

Card 2/3

SOV/101-58-6-6/$\frac{15}{13}$

Slag Portland Cement for the Concrete Pavements of Roads and Airfields

There are 2 sets of graphs, 1 table and 1 Soviet reference.

Card 3/3

VOLKOV, Mikhail Ivanovich, prof.; GEL'MER, Vladimir Oskarovich, kand. tekhn.nauk; ZASHCHEPIN, Aleksey Nikitich, kand.tekhn.nauk; LYSIKHINA, Aleksandra Ivanovna, kand.tekhn.nauk; MIKHAYLOV, Valentin Vasil'yevich, kand.tekhn.nauk; PANTELEYEV, Fedor Nikolayevich, kand.tekhn.nauk; SAMOYLOV, Mikhail Pavlovich, inzh.; ORNATSKIY, N.V., prof., doktor tekhn.nauk, glavnyy red.; MOROZOV, V.I., red.; MAL'KOVA, N.V., tekhn.red.

[Handbook for road engineers; road materials] Spravochnik inzhenera-dorozhnika; dorozhno-stroitel'nye materialy. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1959. 308 p. (MIRA 12:8)
(Road materials)

ZASHCHEPIN, A.N., kand. tekhn. nauk

Pavements of wire-reinforced concrete. Avt. dor. 27 no.7:
12-14 Jl '64. (MIRA 17:12)

ZASHCHEPIN, A.N.; SHESTOPEROV, S.V., prof., red.; SMIRNOVA, I.A., red.

[Use of plasticizing and air absorbing additives in cement concrete] Primenenie plastifitsiruiushchikh i vozdukhovovlekaiushchikh dobavok v tsementnom betone. [n.p.] Rosvuzizdat, 1963. 11 p. (MIRA 17:11)

ZASHCHEPIN, A.N., kand. tekhn. nauk; SHESTOPEROV, S.V., prof.,
red.; SMIRNOVA, I.A., red.

[Use of chlorides in road concrete] Primenenie khloristykh solei v dorozhnom betone. [n.p.] Rosvuzizdat, 1963. 12 p. (MIRA 17:12)

ZASHCHEPIN, A.N., kand.tekhn.nauk; YANBYKH, N.N., inzh.

Stability of concrete payments and the role of air-entraining additives. Avt.dor. 26 no.4:16-18 Ap '63. (MIRA 16:4)
(Pavements, Concrete—Corrosion)
(Air-entrained concrete—Testing)

ZASHCHEPIN, Aleksey Nikitich, kand. tekhn. nauk; LEVITSKIY, Yevgeniy ~~Fedorovich, inzh.;~~ SUDZHAYEV, Ivan Alekseyevich, inzh.; OVCHAROV, Valentin Ivanovich, kand. tekhn. nauk; PINUS, Emil' Ruvimovich, inzh.; MAGILEVICH, V.M., red.; ZUBKOVA, M.S., red. izd-va; MAL'KOVA, N.V., tekhn. red.

[Highway concrete pavements] Betonnye pokrytiia avtomobil'nykh dorog. By A.N.Zashchepin i dr. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1961. 381 p. (MIRA 15:2)

(Pavements, Concrete)

BEZRUK, Vasiliy Makarovich, doktor geol.-miner.nauk; ZASHCHEPIN, Aleksey Nikitich, kand.tekhn.nauk; IVANOV, Fedor Mikhaylovich, kand.tekhn. nauk; MIKHAYLOV, Valentin Vasil'yevich, kand.tekhn.nauk; NEKRASOV, Vladimir Konstantinovich, kand.tekhn.nauk; KURDENKOV, Boris Ivanovich, inzh.; ZASHCHUK, Igor' Vsevolodovich, kand.tekhn.nauk; GORELYSHEV, N.V., kand.tekhn.nauk, red.; YEGOZOV, V.P., red.; GALAKTIONOVA, Ye.N., tekhn.red.; DONSKAYA, G.D., tekhn.red.

[Handbook on laboratory testing of road materials and soils] Spravochnoe rukovodstvo po laboratornym ispytaniiam dorozhno-stroitel'nykh materialov i gruntov. Pod obshchei red. N.V.Gorelysheva. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transporta i shosseinykh dorog RSFSR, 1960. 381 p. (MIRA 13:11)
(Road materials--Testing)

ZASHCHUK, I.V

BEZRUK, Vasiliy Makarovich, doktor geol.-miner.nauk; ZASHCHEPIN, Aleksey Nikitich, kand.tekhn.nauk; IVANOV, Fedor Mikhaylovich, kand.tekhn. nauk; MIKHAYLOV, Valentin Vasil'yevich, kand.tekhn.nauk; NEKRASOV, Vladimir Konstantinovich, kand.tekhn.nauk; KURDENKOV, Boris Ivanovich, inzh.; ZASHCHUK, Igor' Vsevolodovich, kand.tekhn.nauk; GORELYSHEV, N.V., kand.tekhn.nauk, red.; YEGOZOV, V.P., red.; GALAKTIONOVA, Ye.N., tekhn.red.; DONSKAYA, G.D., tekhn.red.

[Handbook on laboratory testing of road materials and soils] Spravochnoe rukovodstvo po laboratornym ispytaniiam dorozhno-stroitel'nykh materialov i gruntov. Pod obshchei red. N.V.Gorelysheva. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transporta i shosseinykh dorog RSFSR, 1960. 381 p. (MIRA 13:11)
(Road materials--Testing)

GORDON, S.S.; ZASHCHUK, I.V.; NADAREYSHVILI, G.F.

Can ultrasonic testing be used in evaluating the strength of concrete. Avt.dor. 23 no.2:13-15 F '60.
(MIRA 13:5)

(Concrete--Testing)
(Ultrasonic waves--Industrial application)

LYUBIMOVA, T.Yu., kand. khim. nauk; ZASHCHUK, I.V., kand. tekhn. nauk;
YAGODOVSKAYA, T.V., inzh.

Acoustical methods for testing the hardening and properties of cement reinforced soils. Avt.dor. 21 no.10:9-11 O '58.
(MIRA 11:11)

(Road material--Testing) (Ultrasonic waves--Industrial applications)

ZASHCHUK, I.V., kand.tekhn.nauk

Cybernetics should be used in road construction. Avt.dor. 25 no.3:5-6 Mr '62. (MIRA 15:3)

1. Nachal'nik laboratorii elektroniki Gosudarstvennogo vsesoyuznogo dorozhnogo nauchno-issledovatel'skogo instituta Ministerstva transprotnogo stroitel'stva SSSR.

(Cyberenetics) (Road construction)

ZASECHUK, S.

[redacted]

Dairy industry in Nepal. Moloch. prom. 18 no.4:44-45 '57. (MIRA 10:4)
(Nepal--Dairy industry)

ZASHCHUK, I.V., kand.tekhn.nauk; NEFEDOVA, Ye.F., inzh.

Reliability of testing the quality of concrete by means of ultrasonic waves. Avt.dor. 24 no.9:19-21 S '61. (MIRA 14:10)

(Ultrasonic waves--Industrial applications)
(Concrete--Testing)

ZASHCHUK, I.V., kand. tekhn. nauk; NEFEDOVA, Ye.F., inzh.

Nondestructive testing of concrete for artificial structures. Avt. dor. 26 no.5:8-9 My '63. (MIRA 16:7)

(Concrete construction—Testing)

ZASHCHUK, Igor' Vsevolodovich, kand. tekhn. nauk; ALEKSEYEV, A.P., red.; KOVRIZHNYKH, L.P., red.izd-va; BODANOVA, A.P., tekhn. red.

[New nondestructive methods of testing road materials and elements]Novye metody ispytaniia dorozhnykh materialov i sooruzhenii bez razrusheniia. Moskva, Avtotransizdat, 1962. 146 p. (MIRA 15:9)

(Road materials—Testing)
(Pavements—Testing)

L 44783-66 EWT(1)/EWP(m)/EWT(m)/EWP(w) IJP(c) WW/EM

ACC NR: AP6025649 (A) SOURCE CODE: UR/0413/66/000/013/0100/0100

INVENTOR: Nadbaylov, A. N.; Zashchuk, I. V.; Podgornyy, G. V.; Radoshevich, S. P.

77
B

ORG: none

9M

26

TITLE: Digital automatic velocity meter for shock and sonic waves in various media. Class 42, No. 183462 [announced by the All-Union Scientific Research Institute of Roads and Highways (Vsesoyuznyy dorozhnyy nauchno-issledovatel'skiy institut)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 100

TOPIC TAGS: velocity measuring instrument, shock wave velocity, ultrasonic velocity

ABSTRACT: This Author Certificate introduces a digital automatic meter for measuring the velocity of shock and sonic waves in various media, such as concrete (see Fig. 1). It consists of a high-frequency generator, a two-channel input device consisting of two piezo-transducers and two identical amplifiers, a delay line, a counter, and an indicator. To increase measurement accuracy and facilitate the taking of readings, to the output of the input devices' amplifiers, which

Card 1/2 UDC: 620.179.16

L 44283-66

ACC NR: AP6025649

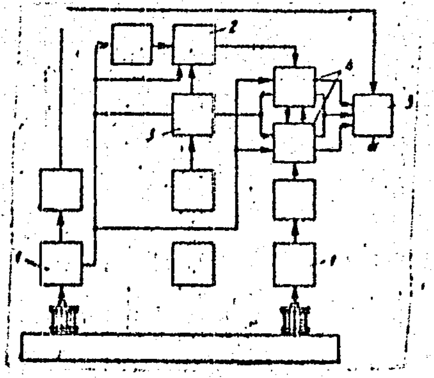

Fig. 1. Digital automatic velocity meter

1 - Input device; 2 - compensation unit;
3 - generator; 4 - two-channel unit; 5 - transducer device.

generate signals with identical amplitudes and forward edges, is connected a unit for compensating the shock-wave-passage difference between the two piezoelectric transducers with digital count, an impulse-excited digital-impulse generator, a two-channel unit with a counting-trend indicator, and a two-way conversion device with a numerical display. Orig. art. has: 1 figure. [SA]

SUB CODE: 09, 20/ SUBM DATE: 27Jul64

Card 2/2

ZASHCHUK, S.

[redacted]

Oil in the Near East. Geog. v shkole 22 no.2:82-84 Mr-Ap '59.
(MIRA 12:6)

(Near East--Petroleum)

ZASHEV, B.

ZASHEV, B. Regarding the place and the way in which the brown leaf roller lays its eggs. p. 314.

Vol. 12, No. 7, Sept. 1956
GORSKO STOPANSTVO
AGRICULTURE
Sofiia, Bulgaria

So: East European Accession, Vol. 6, No. 2, February 1957

ZASHEV, B.

Coniferous needles of fir trees in Rodopite severely attacked by rust. p. 234.

Vol. 11, no. 5, May 1955
GORSKO STOPANSTVO
Sofiya, Bulgaria

So: Eastern European Accession Vol. 5 No. 4 April 1956

ZAKHEV, B.

"The spruce-cone leaf roller."

p. 19 (Gorsko Stopanstvo, Vol. 14, no. 5, 1958, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 9,
September 1958

P

COUNTRY : Bulgaria
CATEGORY : GENERAL&SPEC.ZOOLOGY.INSECTS. Biology and Ecology.
ABS. JOUR. : Ref Zhur -Biologiya, No. 2, 1959, No. 6975
AUTHOR : Panayotov, P.; Zashev, B.; Koromidchiyev, M. *
INST. : Inst. of Forestry, Bulg. Academy of Sciences
TITLE : Yellows Virus Disease of the Gypsy Moth in Bulgaria
ORIG. PUB. : Izv. In-ta gorata. B"lg. AN, 1958, kn. 3, 417-420
ABSTRACT : No abstract

* Tsankov, G.; Grigorova, R.

1/1

ZASHEV, B.

"Fungus Diseases in Our Forests and Their Economic Significance," p. 455. (GORSKO STOPANSTVO, Vol. 9, no. 10, Dec. 1953, Sofiya, Bulgaria.)

SO: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954/Unclassified

STOEV, B.; TASEV, A.; ZASHEV, M.

The hard-alloy armored dies. Tekhnika Bulg 12 no.2:28-30 '63.

1. Zavod za tokoizpraviteli v Pernik.

ZASHEV, V.
"Some important fungal diseases in our forest nurseries and the fight against them." (p.69)
GORSKO STOPANSTVO
(Upravlenie Na Gorskoto Stopanstvo Kum Ministerskiia Suvet) Sofiya Vol 10 No 1 Jan 1954

SO: East European Accessions List Vol 2 No 7 Aug 1954

Cr

1

Preliminary tests on the depressing action of zinc hyposulfite on Ridder ores. N. Y. Zashikhin. *Gorno-Obogatitelnoe Delo* 1933, No. 1, 18-25.—In the concn. of Ridder Pb-Zn ores by flotation, ZnS_2O_4 can be used in place of NaCN + $ZnSO_4$ as a depressing agent. Its advantages are: smaller amts. are required; it does not dissolve Au and it is not harmful to health. S. L. Madorsky

METALLURGICAL LITERATURE CLASSIFICATION

137-58-6-11330

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 10 (USSR)

AUTHOR: Zashikhin, N.V.

TITLE: Concentration of the Copper-nickel Sulfide Ores of the Deposits of the Kola Peninsula and Noril'sk (Obogashcheniye sul'fidnykh medno-nikelevykh rud mestorozhdeniy Kol'skogo poluostrova i Noril'ska)

PERIODICAL: Materialy Soveshchaniya po vopr. intensifik. i usoversh. dobychi i tekhnol. pererabotki medno-nikelevykh i nikelevykh rud, 1956 g. Moscow, Profizdat, 1957, pp 36-49

ABSTRACT: A brief description is given of the ores of these deposits and of investigations conducted to study optimum conditions for their concentration (stages of comminution, behavior of the major minerals comprising these ores in flotation, comminution and classification processes, the use of reagents, etc.)

A.Sh.

1. Copper-nickel ores--Processing 2. Copper-nickel ores--Properties

Card 1/1

SOV/137-58-7-14039

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 7 (USSR)

AUTHOR: Zashikhin, N. V.

TITLE: Dressing the Copper-nickel Ores of the Kola Peninsula (Obogashcheniye medno-nikelevykh rud Kol'skogo poluostrova)

PERIODICAL: [Tr.] Vses. n.-i. i proyektn. in-ta mekhan. obrabotki poleznykh iskopayemykh, 1957, Nr 102, pp 152-173

ABSTRACT: The sulfide Cu-Ni ores of the Kola Peninsula consist of pyrrhotite, pentlandite, and chalcopyrite. Descriptions are offered of investigations conducted to study the dressability of the disseminated ores of the Monche-Tundra district, the lode ores of the Nittis-Kumuzh'ya occurrence, the disseminated ores of the Kaul deposit, the Zhdanov occurrence, and the occurrences of Lovnoozero, Kiriedzhipuuri, Kotsel'vaara and Rajsoaivi.

1. Copper-nickel ores--Processing

A. Sh.

Card 1/1

ZASHIKHIN, N.V.

Investigating the material composition and developing the technology of copper-nickel sulfide ore dressing. Obog.rud 2 no.5:29-34 '57. (MIRA 11:11)

(Copper ores) (Ore dressing) (Sulfides)

ZASHIKHIN, N.V.; PERLOV, P.M.

Use of hydrometallurgy in the dressing of Tandan' oxidized sulfide ores. Obog.rud 5 no.2:28-31 '60. (MIRA 14:8)
(China—Tailings (Metallurgy)) (Leaching)

ZASHIKHIN, N.V.; PERLOV, P.M.

Combined flotation-hydrometallurgy flowsheet for copper recovery from mixed oxide-sulfide ores. Trudy Mekhanobr no.125:35-56 '60.
(MIRA 14:5)

(Copper ores)
(Flotation)
(Hydrometallurgy)

VANEYEV, I.I.; GORLOVSKIY, S.I.; ZASHIKHIN, N.V.; LIPKINA, T.Ye.; Prinimali uchastiye: LAZAREVKSIY, A.F.; ZELENOVA, I.M.; VOLOSHIKOVA, T.P.; TOMKOVID, Ye.I. [deceased]; PETROV, I.V.; SOKOLOV, M.V.; NIKIFOROVA, D.I.

Use of high molecular organic depressants in the flotation of copper-nickel ores. Obog. rud 6 no.2:3-9 '61. (MIRA 14:8)

(Flotation—Equipment and supplies) (Nonferrous metals)

ZASHIKHIN, N.V.

New copper-molybdenum ore dressing plant in El Salvador [from "Mining Congress," no.11, 1960, "The Mining Guidebook," June, 1959]. Obog. rud 6 no.5:49-53 '61. (MIRA 15:1)
(El Salvador--Ore dressing)

GORLOVSKIY, S.I.; ZASHIKHIN, N.V.; MYAGKOVA, T.M.; RYBKINA, V.V.

Ore flotation with use of higher xanthates. Obeg. rud 7 no.3:5-12 '62.
(MIRA 16:4)

(Flotation)

BAKINOV, K. G.; GORLOVSKIY, S. I.; ZASHIKHIN, N. V.; VANEYEV, I. I.; YEROPKIN, Yu. I.;
KONEV, A. S.

"New Methods of Sulfide Concentrate Upgrading."

paper to be presented at the Intl Mineral Dressing Conf, New York City, 20-24 Sep 64.

Inst "Mekhanobr," Leningrad.

ZASHIKHIN, P.M.

[illegible]

Dental cuvette for work with plastic materials. Stomatologiia, no.6:57-58 N-D '55. (MIRA 9:5)

(DENTAL INSTRUMENTS AND APPARATUS)
(DENTAL MATERIALS)

NIKOLAYEVA, S.A.; ZASHIKHINA, T.N.

Corrosion of titanium in copper sulfate solutions obtained by the leaching of copper concentrates. Zhur. prikl. khim. 36 no.9:1942-1945 D '63. (MIRA 17:1)

ACCESSION NR: AP4011288 S/0136/64/000/001/0054/0055

AUTHORS: Nikolayeva, S. A.; Zashikhina, T. N.

TITLE: Titanium ignition under higher oxygen pressures

SOURCE: Tsvetny*ve metally*, no. 1, 1964, 54-55

TOPIC TAGS: titanium ignition, titanium critical oxidation, critical pressure, titanium oxide protective film

ABSTRACT: Laboratory accidents resulting in titanium ignition prompted this study. It was known that titanium autoclaves ignite at high oxygen pressure if there is a discontinuity in the protective passive oxide film. Autoclave tests at different pressures (up to 80 atm) with titanium chips, powder and plates scratched by a rotating spring, ignited by a spark either from an induction coil or from a melting nichrome wire were run with the following results. It is very difficult to ignite a monolithic titanium block as it requires very high oxygen pressures (above 80 atm) and a disruption of its oxide film. Titanium chips half submerged in water and subjected to a "cold spark" ignites at 80 atm oxygen pressure, whereas a

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ACCESSION NR: AP4011288

nichrome spark ignites them at 15 atm pressure, air at 1000C causes ignition at 1 atm. pressure, and at 150C ignition requires 65 atm. Titanium powder ignites at 2 atm. pressure. The presence of Ti powder causes a plate to ignite. Each temperature has a "critical" pressure at which oxidation is so rapid that a disorderly structure of oxide film on the metal causes exposure and ignition. This is illustrated by numerous examples. Orig. art. has: 1 Figure and 2 Tables.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: CH, AP NR REF SOV: 000 OTHER: 000

Card 2/2

ZASHKIL'NYAK, M.M.

Component composition of the extracts from Carpathian oil shales. Khim.i tekh.topl.i masel 5 no.4:30-33 Ap '60.
(MIRA 13:6)

1. L'vovskiy sel'skokhozyaystvennyy institut.
(Oil shales)

ZASHKIL'NYAK, M.M.

Component composition of the humic substances in Carpathian shales. Khim.i tekh.topl.i masel 6 no.4:44-47 Ap '61. (MIRA 14:3)

1. L'vovskiy sel'skokhozyaystvennyy institut.
(Oil shales) (Humic acids)

ZASHKIL'NYAK, M.M.

Infrared spectra of the components of bituminous extracts from Carpathian shales. Khim.i tekh.topl.i masel 7 no.6:30-35 Je '62. (MIRA 15:7)

(Bituminous materials—Spectra)
(Oil shales)

SOV/65-58-11-8/15

AUTHOR: Zashkil'nyak, M. M.

TITLE: The Chemical Composition of Carpathian Shales (O khimicheskom sostave Karpatskikh slantsev)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr 11, pp. 33 - 35 (USSR)

ABSTRACT: There are menilitic shales in the Carpathian region which contain various forms of organic substances. Experiments were carried out on the extraction of kerogens from three different menilitic shales. Details of the tested samples are given in Table 1. From the results in Table 2 it is apparent that the yield of the alcohol-benzene-water alkaline extract is 5 - 10 times higher than the yield of extracts obtained during an alcohol-benzene extraction in a Soxhlet apparatus; in some experiments the yield was 30% higher. It can also be seen that the yields of the neutral (8 - 30%) and of the acid part (16 - 40%) varies within large limits during different experiments. The alkali obviously separates the kerogen into the neutral and acid components. The composition of the alcohol-benzene and of the water-alkali extracts (Table 3)

Card 1/2

SOV/65-58-11-8/15

The Chemical Composition of Carpathian Shales

indicates that the carbon and hydrogen content in the former extract is slightly lower than in the alcohol-benzene-water-alkali extracts. It is suggested that this is due to the presence of tar acids in the alcohol-benzene extract which pass into the acid part when alkali is used during the extraction process. This method can be used for defining the characteristics of kerogen of the Carpathian shales, for the determination of the degree of oxidation, and for defining the oxidation mechanism. There are 2 Tables.

ASSOCIATION: L'vovskiy sel'skokhozyaystvennyy institut (L'vov Agricultural Institute)

Card 2/2

VEKHOV, V.A.; ZASHKVARA, S.F.

Fisher's aluminum retort. Knim. i tekh. topl. i masel 9 no.1:41-42 Ja '64. (MIRA 17:3)

1. Dnepropetrovskiy metallurgicheskiy institut.

ZASHKVARA, V.G.

KARGIN, V.A.

5(3) P4 PHASE I BOOK EXPLOITATION SOV/1589

Akademiya nauk SSSR.

Khimiya bol'shikh molekul; sbornik statey (Chemistry of Large Molecules; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 299 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 30,000 copies printed.

Compiler: G.V. Sklovskiy; Resp. Ed.: A.V. Topchiyev, Academician; Ed. of Publishing House: V.A. Boyarskiy; Tech. Ed.: I.N. Guseva.

PURPOSE: This book is intended for a wide circle of readers including those who have had no training in chemistry. It can also serve as amanual for propagandists, teachers, and journalists.

ZASHKVARA, V.G.

Chemistry of Large Molecules (Cont.) SOV/1589

COVERAGE: This collection of articles reflects the trend for the future development of the Soviet chemical industry as indicated by the May plenary session of the Central Committee of the Communist Party within the framework of the new Seven Year Plan. These articles were published in newspapers and journals. The authors, scientists and industry workers, developed the theme of accelerated development of the chemical industries, and sciences, with stress on the manufacture of synthetic fibers, plastics, and other materials. Some of the articles were abridged, revised, or enlarged. The articles were selected so as to give an adequate survey of the chemistry and technology of high-molecular-weight compounds and their use in industry, agriculture, and in the manufacture of consumers' goods. Mentioned are raw materials for the production of polymers. This book belongs to the popular-science series of the Academy of Sciences. Similar volumes are intended for future publication. No references are given.

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Card 7/8

ZASHKVARA, V.G.; IVANOV, P.A.; SHCHERBININ, A.M.

Mechanized screening of coal samples. Koks i khim. no.10:17-18 '58. (MIRA 11:11)

(Coke industry--Equipment and supplies)

ZASHKVARA, V.G.

In the Karkov Coal Chemical Scientific Research Institute. Koks i khim. no.10:59. '58. (MIRA 11:11)
(Coke industry--By-products)

SOV/68-58-12-18/25

AUTHOR: Zashkvara, V.G., Gryaznov, N.S. and Shchukin, P.A. (Candidates of Technical Science)

TITLE: The First Conference of the Workers of the Fuel Industry of Czechoslovakia (Pervyy s"yezd rabotnikov toplivnoy promyshlennosti Chekhoslovakii)

PERIODICAL: Koks i Khimiya, 1958, Nr 12, pp 50-52 (USSR)

ABSTRACT: An outline of the proceedings of the conference which took place on the 12-17th May 1958 is given.

ASSOCIATIONS: UKhIN, VUKhIN and IGI AN SSSR

Card 1/1

ZASHKVARA, V.G., kandidat tekhnicheskikh nauk; SAPOZHNIKOV, Ya.Yu., inzhener; CHERKASSKAYA, E.I., inzhener.

Maintaining uniform quality of coal and charges in the coke industry. Stal' 15 no.10:871-879 O '55. (MLRA 9:1)
(Coke ovens)

ZASHKVARA, V. G.

Averaging coals and oven charges in coking plants

ZASHKVARA, V.G., kandidat tekhnicheskikh nauk; SAPOZHNIKOV, Ya.Yu.

Coal averaging and the selection of a type of coal storage piles for by-product coking plants. Koks i khim. no.7:12-16 '57. (MIRA 10:7)

1. Ukrainskiy uglekhimicheskiy institut.
(Coal--Storage) (Coal preparation)

AUTHOR: Zashkvara, C.G., Candidate of Technical Sciences, 137
Cherkasskaya, E.I., Engineer, and Yarosh, N.P., Engineer,
(U.Kh.I.N.)

TITLE: An investigation of blending coals in mixers. (Issledovaniya po smesheniyu ugol'nykh shikht v smesitel'nykh mashinakh.)

PERIODICAL: "Koks i Khimiya" (Coke and Chemistry),
1957, No. 2, pp. 15 - 19 (U.S.S.R.)

ABSTRACT: The efficiency of mixing coals in various types of mixing machines was investigated. A disintegrator type was found to be most efficient. There are 4 tables and 5 diagrams. There are 3 references, 2 of which are Russian.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

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CONSTRUCTION OF BUNKERS, SILOS AND COAL-TOWERS FROM THE POINT
OF VIEW OF THE HANGING OF THE COAL. V. G. Zashkvara. (Koks i
Kihimiya, 1940, No. 9, pp. 16-25). (In Russian). The behaviour
of coal in bunkers, silos and coal-towers is considered partly on the
basis of theory and small-scale experiments, but mainly on the
basis of practical plant experience. The latter provides evidence
that the hanging of coal can be considerably reduced by using
conical instead of pyramid-shaped bottoms and having the opening
eccentrically positioned. Interior inclined surfaces should be

smooth (preferably lined with sheet iron), and there should be a
gradual transition between the vertical and inclined surfaces. The
effects of certain characteristics of the coal on its tendency to hang
are also considered. In the case of towers, in addition to the
above features, the bottoms should be made of metal, openings
should be made as large as possible, some provision should be
made for the breaking up and distribution of the flow of the coal
being charged, and "breakers" should be provided near the openings to counteract compacting of the coal on the inclined surfaces
and to prevent bridging.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VODNEV, G.G.; SHELKOV, A.K.; DIDENKO, V.Ye.; FILIPPOV, B.S.; TSAREV, M.N.; ZASHVARA, V.G.; LITVINENKO, M.S.; MEDVEDEV, K.P.; MOLODTSOV, I.G.; LGALOV, K.I.; RUBIN, P.G.; SAPOZHNIKOV, L.M.; TYUTYUNNIKOV, G.N.; DMITRIYEV, M.M.; LEYTES, V.A.; LERNER, B.Z.; MEDVEDEV, S.M.; REVYAKIN, A.A.; TAYCHER, M.M.; TSOGLIN, M.E.; DVORIN, S.S.; RAK, A.I.; OBUKHOVSKIY, Ya.M.; KOTKIN, A.M.; ARONOV, S.G.; VOLOSHIN, A.I.; VIROZUB, Ye.V.; SHVARTS, S.A.; GINSBURG, Ya.Ye.; KOLYANDR, L.Ya.; BELETSKAYA, A.F.; KUSHNEREVICH, N.R.; BRODOVICH, A.I.; NOSALEVICH, I.M.; SHTROMBERG, B.I.; MIROSHNICHENKO, A.M.; KOPELIOVICH, V.M.; TOPORKOV, V.Ya.; AFONIN, K.B.; GOFTMAN, M.V.; SEMENENKO, D.P.; IVANOV, Ye.B.; PEYSAKHZON, I.B.; KULAKOV, N.K.; IZRAELIT, E.M.; KVASHA, A.S.; KAFTAN, S.I.; CHERNYKH, M.S.; SHAPIRO, A.I.; KHALABUZAR', G.S.; SEKT, P.Ye.; GABAY, L.I.; SMUL'SON, A.S.

Boris Iosifovich Kustov; obituary. Koks i khim. no.2:64 '55.(MLRA 9:3)
(Kustov, Boris Iosifovich, 1910-1955)

ARONOV, Samuil Grigor'yevich; BAUTIN, Ivan Grigor'yevich; VOLKOVA, Zoya Andreyevna; VOLOSHIN, Arkhip Il'ich; VIROZUB, Yevgeniy Vladimirovich; GABAY, Lev Izrailevich, DIDENKO, Viktor Yefimovich; ZASHKVARA, Vasiliy Grigor'yevich; IVANOV, Pavel Aleksandrovich, KUSTOV, Boris Iosifovich [deceased]; KOTOV, Ivan Konstantinovich; KOTKIN, Aleksandr Matveyevich; KOMANOVSKIY, Maksim Semenovich; LEYTES, Viktor Abramovich, MOROZ, Mikhail Yakovlevich; NIKOLAYEV, Dmitriy Dmitriyevich. OBUKHOVSKIY Yakov Mironovich; RODSHTEYN, Pavel Moiseyevich; SAPOZHNIKOV, Yakov Yudovich, SENICHENKO, Sergey Yefimovich; TOPORKOV, Vasiliy Yakovlevich; CHERNYKH Mikhail Sergeyevich; CHERKASSKAYA, Esfir' Ionovna, SHVARTS, Semen Aronovich; SHERMAN, Mikhail Yakovlevich; SHVARTS, Grigoriy Aleksandrovich; LIBERMAN, S.S., redaktor izdatel'stva; ANDREYEV, S.P., tekhnicheskiy redaktor

[Producing blast furnace coke of uniform quality; a collection of articles for the dissemination of advanced practices] Poluchenie domennogo koksa postoiannogo kachestva; sbornik statei po obmenu peredovym opytom. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1956. 300 p. (MIRA 9:8)
(Coke industry)

ZASHKVARA, V.G., kandidat tekhnicheskikh nauk.

Crushing and grinding coals. Koks i khim. no.7:7-10 '56. (MLRA 9:12)

1. Ukrainskiy uglekhimicheskiy institut.
(Coal, Pulverized)

ZASHKVARA, V.G.

68-7-4/16

AUTHORS: Zashkvara, V.G. (Cand.Tech.Sc.) and Sapozhnikov, Ya.Yu.

TITLE: Blending of Coals and the Choice of the Type of Coal Stock Yards for Coke Oven Works. (Usredneniye ugley i vybor tipa ugol'nykh skladov dlya koksokhimicheskikh zavodov).

PERIODICAL: Koks i Khimiya, 1957, Nr 7, pp. 12-16 (USSR)

ABSTRACT: Criticism of a paper published under the above title by P.A. Baydalinov in Koks i Khimiya, 1957, Nr 2. It is stated that Baydalinov is not clear in defining the averaging and blending processes, and compares the efficiency of averaging in two bunkers of a coal load of 800 to 1400 ton (i.e., from one or two deliveries) with that carried out in a bedding plant of a coal load of 3500 to 4000 tons from a number of deliveries. For the above reasons the authors question Baydalinov's conclusions and present evidence supporting the necessity of averaging (preblending) coals in bedding plants. The authors also criticise Baydalinov's views on the present bunker-stocking arrangements and consider that open air bedding plants of a large capacity should be introduced on coke oven works (at present these are usually built on mining sites). There are 4 tables, 2 figures and 5 references, including 4 Slavic.

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Blending of Coals and the Choice of the Type of Coal Stock Yards for Coke Oven Works.

ASSOCIATION: UKhIN.

AVAILABLE: Library of Congress

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SOV/68-58-9-16/21

AUTHOR: Zashkvara, V.G. (Candidate of Technical Science)

TITLE: Summary of the Work Carried out by UKhIN in 1957 (Itogi raboty UKhIN za 1957 g.)

PERIODICAL: Koks i Khimiya, 1958, Nr 9, pp 56-58 (USSR)

ABSTRACT: A brief outline of the work carried out by the Ukrainian Coal-Chemical Institute in 1957 is given. Main points: 1) Investigation of coking properties of 148 new coal seams which resulted in 1.9 mil. tons of new coals used for coking. 2) Systematic investigation of the application of gas coals for coking blends containing 23-25% of gas coals were developed. 3) Investigation of the coking properties of coals from Western Donbas. Laboratory studies indicated the possibility of using these coals for coking. 4) Preparation of coals for coking by preferential crushing. 5) Coal beneficiation -secondary beneficiation of coarse and fine concentrates resulted in an 0.7 - 1% decrease in ash and 0.2 - 0.4% in sulphur content. 6) Methods of testing coke quality. It was established that a satisfactory evaluation of the quality of metallurgical coke can be obtained by testing 50kg sample of a single size fraction 80-60mm in a small drum. 7) Development of a small scale mechanised

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SOV/68-58-9-16/21

Summary of the Work Carried Out by UKhIN in 1957

screening plant for size analysis of coke. 8) Investigation of the operation of coke oven gas desulphurisation plants by the vacuo-carbonate method. The use of the waste heat of ammonia liquor for heating the absorption liquor was found to be sufficient to obtain the required degree of purification of gas. 9) Cyanide purification plant was designed and built on the Yasinovskiy Coking Works (no information given). 10) Studies of purification methods of effluent waters. 11) The use of plate scrubbers for absorbing benzole from coke oven gas. 12) The use of flame heating for debenzolising absorption oil. 13) Improvement in the technology of treatment of coal tar (no data).
There is 1 table.

ASSOCIATION: UKhIN

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SOV/68-58-10-5/25

AUTHORS: Zashkvara, V.G., Ivanov, P.A. and Sherbinin, A.M.

TITLE: Mechanisation of Screening Coal Samples (Mekhanizatsiya rasseva prob uglya)

PERIODICAL: Koks i Khimiya, 1958, Nr 10, pp 17 - 18 (USSR)

ABSTRACT: A small screening plant for size analysis of coal samples of the order of 2 tons, designed by UKhIN is described and illustrated. It consists of 4 screens and 5 receiving bunkers, so that the division of a coal sample into 5-size fractions is possible. The throughput is 1 000 kg/h. The plant was tested on the Zaporozh'ye Coking Works with coals of up to 8% moisture content. The efficiency of the smallest screen, 3 x 3 mm, was found to be 97.2%. At present, a plant capable of separating coal into 8-size fractions is being designed by UKhIN. There is 1 figure.

ASSOCIATION: UKhIN

Card 1/1

ZASHKVARA, V.G.; SENICHENKO, S.Ye.; CHERKASSKAYA, E.I.; SEMISALOVA, V.N.

Effect of the size of the grain and of the sieve composition of coals on the coking process. Koks i khim. no.8:3-8 '62.

(MIRA 17:2)

1. Ukrainskiy uglekhimicheskiy institut.

MIROSHNICHENKO, A.M., kand. tekhn. nauk; PANCHENKO, S.I., doktor tekhn. nauk; SHTROMBERG, B.I., kand. tekhn. nauk; FRISHBERG, V.D., kand. tekhn. nauk; BAYDALINOV, P.A., inzh.; GRYAZNOV, N.S., doktor tekhn. nauk; ZASHKVARA, V.G., doktor tekhn. nauk; LAZOVSKIY, I.M., kand. tekhn. nauk; MARINICHEV, B.T., inzh.; FEL'DBRIN, M.G., kand. tekhn. nauk; BAKUN, N.A., inzh.; BARATS, B.M., inzh.; VOZNYY, G.F., kand. tekhn. nauk; MIKHAL'CHUK, A.M., inzh.; TOPORKOV, V.Ya., kand. tekhn. nauk; FLORINSKIY, N.V., inzh.; KHAYET, A.N., inzh.; SHELKOV, A.K., inzh., red.; ARONOV, S.G., doktor tekhn.nauk, red.; PREOBRAZHENSKIY, P.I., inzh., red.

[Manual for coke chemists in six volumes] Spravochnik koksokhimika v shesti tomakh. Moskva, Izd-vo "Metallurgiia." Vol.1. [Source of raw materials and preparation of coal for coking] Syr'evaia baza i podgotovka uglei k koksovaniiu. 1964. 490 p. (MIRA 17:5)

ZASHKVARA, V.G.; VOLOSHIN, A.I.; MIROSHNICHENKO, A.M.

Tasks for the improvement of the quality of blast-furnace coke, facing the coke and coal chemicals plants in the Ukraine. Koks i khim. no.11:35-41 '63. (MIRA 16:12)

1. Ukrainskiy uglekhimicheskiy institut.

ZASHKVARA, V.G.; SENICHENKO, S.Ye.; PAPUSHIN, L.L.

New method for preparing coking charges. Koks i khim. no.8:61-63 '61. (MIRA 15:1)

1. Ukrainskiy uglekhimicheskiy institut (for Zashkvara, Senichenko).
2. Yasinovskiy koksokhimicheskiy zavod (for Papushin).

(Coke)

ZASHKVARA, V.G.; SENICHENKO, S.Ye.; CHERKASSKAYA, E.I.

Interaction of coal granules during coking. Koks i khim. no.4:8-12 '61. (MIRA 14:3)

1. Khar'kovskiy nauchno-issledovatel'skiy uglekhimicheskiy institut.
(Coal—Carbonization)

ZASHKVARA, V.G.; SENICHENKO, S.Ye.

Most suitable system of crushing cleaned Donets coals. Koks i khim. no.11:15-20 '60. (MIRA 13:11)

1. Ukrainskiy uglekhimicheskiy institut.
(Coal preparation)

SEKT, P.Ye.; TESLENKO, F.F.; LEVIN, S.A.; TKACHEV, S.F.; ZASHKVARA, V.G.; TOPORKOV, V.Ya.; BELIKOV, A.M.

Location as a factor affecting the economic indices pertaining to the operation of coking coal cleaning plants of the Donets Basin. Koks i khim. no.2:53-56 '60. (MIRA 13:5)

1. Khar'kovskiy inzhenerno-ekonomicheskiy institut (Sekt, Teslenko, Levin, Tkachev). 2. Ukrainskiy nauchno-issledovatel'skiy uglekhimicheskiy institut (for Zashkvara, Toporkov). 3. Ukrniiugleobogashcheniye (for Belikov).

(Coal preparation)

ZASHKVARA, V.G.; VOL'FSON, B.N.

Trend of the research on coal and its uses in many capitalist countries. Koks i khim. no.6:61-64 '60. (MIRA 13:7)

1. Ukrainskiy uglekhimicheskiy institut.
(Coal)

ZASHKVARA, V.G.; ARONOV, S.G., otv.red.; LIBERMAN, S.S., red.izd-va;
ANDREYEV, S.P., tekhn.red.

[Organization of the storage of coking coals] Organizatsiia [illegible] khraneniia koksuiushchikhsia uglei. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 253 p. (MIRA 12:10)
(Coal--Storage) (Coke industry)

ZASHKVARA, V.V.; KORSUNSKIY, M.I.

Experimental study of the ion-optical properties of an electrostatic analyzer with a linearly distributed potential on deflecting electrodes. Zhur. tekh. fiz. 34 no.7:1285-1292 Jl '64 (MIRA 17:8)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina.

ACCESSION NR: AP4028964 S/0057/64/034/004/0737/0744

AUTHOR: Zashkvara, V.V.; Kosmachev, O.S.

TITLE: Application in mass spectroscopy of a magnetic analyzer with two-fold focusing of the ion beam

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.4, 1964, 737-744

TOPIC TAGS: electron optics, mass spectrometry, magnetic analyzer, double focusing magnetic analyzer, magnetic analyzer aberration

ABSTRACT: In this paper the authors discuss the second order electron-optical properties of a magnetic analyzer consisting of a sector of a nonuniform axially symmetric field of the type proposed by N.Svartholm and K.Siegbahn,(Arkiv Mat.Astr.Fys. 33A,No.21,1946). Their purpose is to find suitable configurations for mass spectrometry applications, in which the ion source would be outside the field and the sector angle would be less than $\pi\sqrt{2}$. The differential equations for the trajectories are solved by a perturbation method in which second order terms in the deviations of the orbit from the central circular orbit are included, and the three second order angular aberrations are calculated. In this calculation the effect of the fringe

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ACCESSION NR: AP4028964

field on the beam as it enters and leaves the sector is neglected. It is found that the second order aberrations can be made to vanish for sector angles $\pi\sqrt{2}/2$. Two solutions are possible for the sector angle $\pi\sqrt{2}/2$. In one solution the ratios of the object and image distances to the radius of the central orbit are $\sqrt{2}/2$ and $2\sqrt{2}$, respectively; in the other solution these ratios are reversed. Field configurations are examined for which the image distance is zero, i.e., for which the image is formed at the boundary of the sector. Such a configuration would have the advantage of avoiding the defocusing effect of the fringe field as the beam leaves the sector, although fringe effects would still be present at entrance. No configuration of this type is possible for which all three second order aberrations vanish. Configurations are tabulated for which selected second order aberrations vanish, and suitable configurations are found for which the sector angle is between 140° x $\sqrt{2}$ and 160° x $\sqrt{2}$. Orig. art. has: 31 formulas, 2 figures and 3 tables.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut imeni V. I. Lenina (Khar'kov Polytechnic Institute)

SUBMITTED: 22 Jan63 DATE ACQ: 28Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 002 OTHER: 002

Card 2/2

ACC NR: AP6036035 SOURCE CODE: UR/0057/66/036/011/2035/2041

AUTHOR: Zashkvara, V. V.

ORG: Institute of Nuclear Physics, Kaz.SSR, Alma-Ata (Institut yadernoy fiziki Kaz.SSR)

TITLE: Double angular focusing of an ion beam in a magnetic analyzer with two sector fields

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 11, 1966, 2035-2041

TOPIC TAGS: electron optics, spectrometer, beta spectroscopy, aberration, astigmatism

ABSTRACT: The author discusses the possibility of compensating the higher order astigmatism of a $\pi\sqrt{2}$ type magnetic spectrometer by employing two sector fields in which the magnetic field strengths vary differently with distance from the axis. There is discussed only the case in which the two sector fields have the same central angle and are contiguous along a radius, and the source and image are located on the field boundaries as in a conventional $\pi\sqrt{2}$ spectrometer. The variations of the magnetic field in the transition region between the different fields in the two sectors (internal fringe field) are neglected. The vertical (axial) components $H_z^{(i)}$ of the magnetic fields in the two sectors $i = 1, 2$ are expanded in powers of the radial deviation $q = (r - r_0)/r_0$ from the central trajectory: $H_z^{(i)} = H_0^{(i)} (1 - a_i q + b_i q^2 + c_i q^3 + \ldots)$. The condition for vanishing of the first order axial astigmatism

UDC: 538.691

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ACC NR: AP6036035

(double focusing) is $a_1 + a_2 = 1$. The total sector angle must also have a specific value, which is $\pi\sqrt{2}$ when $a_1 = a_2 = 1/2$ and is less than but close to $\pi\sqrt{2}$ when $a_1 \neq a_2$. When $a_1 \neq a_2$ it is possible to correct higher order on-axis aberrations by appropriately selecting the coefficients b_i, c_i, ... The second order on-axis aberrations are calculated, and the values of the b_i for which they vanish, together with other characteristics of the system, are tabulated for a number of different values of the a_i. The second order off-axis aberrations of the tabulated systems were calculated and found to be small, but the calculations of the off-axis aberrations are not given. Orig. art. has: 18 formulas, 1 figure and 1 table.

SUB CODE: 20 SUBM DATE: 27Nov65 ORIG. REF: 002

Card 2/2

ZASHKVARA, V.V. KHOTKEVICH, V.I., CHAYKOVSKIY, E.F.

"Latent Energy of the Deformation of Metals Under Low Temperatures," DAN SSSR, V. 96, No 3, AN (Academy of Sciences) USSR publication, M. - L. 1954,

05432
SOV/120-59-3-3/46

AUTHORS: Korsunskiy, M. I., and Zashkvara, V. V

TITLE: On the Possible Reduction of Aberration Coefficients in Non-uniform Field Analyzers (O vozmozhnosti umen'sheniya aberratsionnykh koeffitsiyentov v analizatorakh s neodnorodnymi polyami)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3, pp 21-25 (USSR)

ABSTRACT: Contemporary charged particle spectroscopy uses electrostatic and magnetic analyzers with non-uniform, axially symmetric fields. The use of a non-uniform electrostatic field which falls off along the radius more rapidly than the field in a cylindrical condenser and also of a non-uniform magnetic field, enables one to increase considerably the dispersion of analyzing devices (Refs 1 to 5). However, such fields have the disadvantage that they have relatively large aberration effects (Ref 3). The aim of the present paper is to investigate the possibility of removing or minimising these aberration effects, which are due to the non-uniform field, while preserving the large dispersion. It is shown that

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On the Possible Reduction of Aberration Coefficients in Non-uniform Field Analyzers

this can be done by using a number of electrostatic or magnetic non-uniform fields slightly different from each other. Such a multisector analyzer is analogous to a collection of lenses correcting the principal aberrations of an optical system. The particular set-up considered is shown in Fig 1 and consists of a number of non-uniform electrostatic fields in series. In Fig 1 the sources on the left and the detector on the right. The field components in the neighbourhood of the main orbit (a circle of radius r_0) may be represented as power series in the small quantities $\rho = (r - r_0)/r_0$ and $\xi = z/r_0$ (Eqs (1) and (2)). Expressions (1) and (2) satisfy Maxwell's equations and the symmetry requirement with respect to the plane $z = 0$. It is assumed that on the boundary between two neighbouring sectors there is a jump within the field from a value $E^{(n)}$ to $E^{(n + 1)}$. At the input and output of the analyzer the field changes discontinuously from zero to the values given by Eqs (1) and (2). The equations of motion of an ion with a mass m

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On the Possible Reduction of Aberration Coefficients in Non-uniform Field Analyzers

and charge e in the nth sector are given by Eq (3). This equation is solved by the method of successive approximations and the first order focussing condition and energy dispersion are derived and are given by Eqs (10) and (11). Next, an analysis is given of the aberrations. It is shown that by suitable choice of the geometry the aberration coefficients may be reduced to zero. This analysis can be extended to magnetic fields. In particular, second order double focussing and high dispersion may be obtained by using a three-sector electrostatic analyzer in conjunction with a sector producing a non-uniform magnetic field. There are 4 figures and 6 references, 5 of which are Soviet and 1 German.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnical Institute)

SUBMITTED: April 14, 1958

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30932

S/057/62/032/007/007/013
B104/B102

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26.2332

AUTHORS: Zashkvara, V. V., and Korsunskiy, M. I.

TITLE: Electrostatic analyzer with linearly distributed potential on the deflecting electrodes

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 7, 1962, 840-847

TEXT: It is shown that an analyzing electrostatic sector field, as used in the spectroscopy of charged particles, can be generated by a potential which is linearly distributed over the lateral surfaces of coaxial cylinders. In the general case, the analyzing field with various ion-optical properties is generated by a linear distribution of the potential, which may be described by two families of straight lines depending on three factors of the analyzing field. A field generated by such a distribution of the potential is equal to that of a cylindrical or spherical capacitor. The totality of analyzing fields with equal ion-optical properties is described in first approximation by two families of linear distribution functions depending on two field factors and on the dimensions of the cylindrical torus. It is shown possible to

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Electrostatic analyzer with ...

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regulate the ion-optical properties of each sector separately. A circuit diagram for the supply of electrodes wherein the voltages arrive at the deflecting electrodes by way of voltage dividers is discussed. There are 6 figures.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Institute)

SUBMITTED: August 16, 1961

Card 2/2

ZASHKVARA, V.V.; KOSMACHEV, O.S.

Use of a magnetic analyzer with double focusing over the angles of divergence of the ion beam in mass-spectroscopy. Zhur. tekh. fiz. 34 no.4:737-744 Ap '64. (MIRA 17:4)

1. Khar'kovskiy politekhnicheskiy institut imeni Lenina.

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24,2300

AUTHOR: Zashkvara, V.V.

TITLE: On multisector electrostatic and magnetic analyzers with non-uniform fields

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 299, abstract 7Zh48 ("Tr. Khar'kovsk. politekhn. in-ta", 1959, v. 25, 43-60)

TEXT: The author investigated conditions for eliminating aberrations in some types of non-uniform electrostatic and magnetic fields with high dispersion. It has been theoretically established that the use of several consecutively arranged non-uniform electrostatic fields or non-uniform magnetic fields, slightly differing from each other, makes it possible to considerably reduce the values of aberration coefficients, preserving high dispersion. This enables one to design analyzers of charged particle beams, possessing high resolving power. These conclusions were arrived at from consideration of ion motions in non-uniform electrostatic and magnetic fields by the successive approximation method; the fields proper were given in the form of series, and coefficients at the terms of corresponding series were determined from the condition of main aberration coef-

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ficients being equal to zero. The results are presented of calculating three-sector electrostatic and magnetic analyzers in which three main aberration coefficients are reduced to zero; dispersion in the case of electrostatic field exceeds, by a factor of 18, dispersion of an analogous instrument with cylindrical field, and in the case of magnetic field, 9 times as high as dispersion of the instrument with uniform magnetic field. Based on the results obtained, a mass-spectrograph with double focusing and high resolving power has been calculated for non-uniform electrostatic and magnetic fields.

V. Bazakutsa

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[Abstracter's note: Complete translation]

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AUTHORS: Korsunskiy, M.I., Zashkvara, V.V., Bazakutsa, V.A.

TITLE: On the joint action of electric and magnetic difference-type sector fields on an ion beam

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 299, abstract 7Zh49 ("Tr. Khar'kovsk. politekhn. in-ta", 1959, v. 25, 61 - 71)

TEXT: It was established that a system of consecutively arranged electric and magnetic difference-type fields ensures double focusing of a divergent ion beam. Moreover, in this system it is possible to bring about, by a correspondingly selected shape of the magnetic field, also additional focusing along the z-axis. Conditions are derived for automatic compensation of variation of one field by varying the other, which ensures a high stability of the ion-optical system. As a result of theoretical investigation of the ion motion, optimum values of parameters were selected for obtaining high dispersion at small image width. The ion-optical system studied can be utilized for designing a powerful mass-spectrograph with a high resolving power. There are 11 references. V. Bazakutsa

[Abstracter's note: Complete translation]

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Card 1/1

Latent Energy of Deformation of Metals [Cadmium, Lead, and Copper] at Low Temperatures. V. I. Iholkevich, E. F. Chaikovsky, and V. V. Zashkvara (Doklady Akad. Nauk S.S.S.R., 1954, 96, (3), 453–456).—[In Russian]. The latent energy of deformation of Cd and Pb at −196° C. and of Cu [illegible]

Translation B-82533, 2 Feb 55